



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/099,776	03/14/2002	Roger D. Weekly	AUS920020042US1	4834

7590

08/19/2003

Kelly K. Kordzik
5400 Renaissance Tower
1201 Elm Street
Dallas, TX 75270

EXAMINER

SIEK, VUTHE

ART UNIT

PAPER NUMBER

2825

DATE MAILED: 08/19/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/099,776

Applicant(s)

WEEKLY, ROGER D.

Examiner

Vuthe Siek

Art Unit

2825

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) 4-15 is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1 is/are rejected.
- 7) ☒ Claim(s) 2 and 3 is/are objected to.
- 8) ☒ Claim(s) 1-15 are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 14 March 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☒ Interview Summary (PTO-413) Paper No(s). ____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2. 6) ☐ Other:

Art Unit: 2825

DETAILED ACTION

1. This office action is in response to application 10/099,776 and filed on 03/14/2002. Claims 1-15 remain pending in the application.

Election/Restriction

2. Restriction to one of the following inventions is required under 35 U.S.C. § 121:
 - I. Claims 1-3, drawn to a multiple chip module, classified in class 716, subclass 1.
 - II. Claims 4-15, drawn to a method for identifying pin-locations to be used for diagonal interconnections in a multi-chip module comprising the steps of calculating lengths, receiving an input threshold, and tagging as recited in the claim, classified in class 716, subclass 10.

Inventions Group I and Group II are related as product made and process of making. The inventions are distinct if either or both of the following can be shown: (1) that the process as claimed can be used to make other and materially different product or (2) that the product as claimed can be made by another and materially different process (MPEP § 806.05(f)). In the instant case, the product as claim 1 may not require the steps of calculating lengths, receiving an input threshold value and performing tagging as required in claims 4, 8 and 12. The product made as in claim 1 can be done by placement tool and diagonally routing performance.

Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification and subject matter, restriction for examination purposes as indicated is proper. In addition, different search is required for Group II is not required for Group I, restriction for examination purposes as indicated is proper. For example, identifying pin locations

Art Unit: 2825

require the steps of calculating lengths, receiving an input threshold value and tagging for Group II. These steps are not found in Group I.

During a telephone conversation with Mr. Kelly K. Kordzik (36,571) on 7/4/2003 a provisional election was made with traverse to prosecute the invention of Group I, claims 1-3. Affirmation of this election must be made by applicant in replying to this Office action. Claims 4-15 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention. Applicant is requested to cancel claims 4-15 as being non-elected invention.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claim 1 is rejected under 35 U.S.C. 102(e) as being anticipated by Rostoker et al. (6,407,434).

5. As to claim 1, Rostoker et al. disclose a cell architecture product using hexagonal shaped cells, where the product including multiple chip modules (For example, see Figs. 8, 9, 10, 12, 42, 43, 63, 75-78, 127; col. 88, lines 8-67) comprising a first chip; a second chip located adjacent to said first chip, wherein said second chip is interconnected with said first chip by one or more orthogonal interconnections; and a

Art Unit: 2825

third chip located diagonal to said first chip, wherein said chip is interconnected with said first chip by one or more diagonal interconnections, wherein said one or more diagonal interconnections between said first chip and said third chip are interconnected between said first chip and said third chip are interconnected between a first set of pins located on said first chip and a second set of pins located on said third chip, where a pattern formed by said first set of pins and said second set of pins is a triangular pattern. As example, Fig. 9 shown triangular set of pins of a cell that can be used to tri-directional interconnections, where the tri-directional interconnections include orthogonal and diagonal interconnections. These cells are used to implement an integrated circuit design including multiple chip modules (MCMs) as shown for example in Fig. 104 (col. 91, col. 32-52; col. 88, lines 8-67). As noted by Rostoker et al. products with three directional interconnection arrangement substantially reduce the total wirelength interconnect congestion of the integrated circuit and shorten interconnect paths than conventional rectilinear routing product (col. 18, lines 56-64).

Allowable Subject Matter

6. Claims 2-3 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. The prior art of record does not teach or fairly suggest a longest diagonal interconnection is substantially a same length as a second longest diagonal interconnection and a longest diagonal interconnection is substantially a same length as a longest orthogonal interconnection.

Art Unit: 2825


Conclusion

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Vuthe Siek whose telephone number is (703) 305-4958. The examiner can normally be reached on M-F (6:30-4:00) 2nd Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew Smith can be reached on (703) 308-1323. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9318 for regular communications and (703) 872-9319 for After-Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-1782.

Vuthe Siek
Primary Examiner
August 6, 2003


**VUTHE SIEK
PRIMARY EXAMINER**